

EUROPEAN PATENT OFFICE

Patent Abstracts of Japan

PUBLICATION NUMBER : 09135045
PUBLICATION DATE : 20-05-97

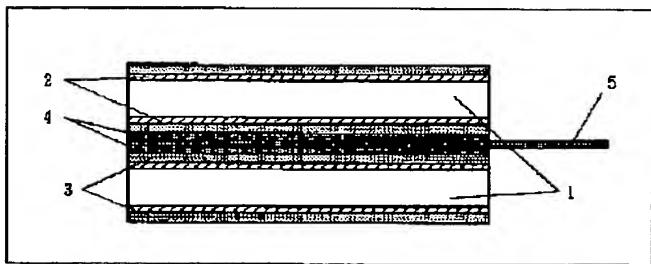
APPLICATION DATE : 07-11-95
APPLICATION NUMBER : 07314722

APPLICANT : TEIKA CORP;

INVENTOR : CHISAKA MAKOTO;

INT.CL. : H01L 41/09 H01L 41/187 H01L 41/22

TITLE : PIEZOELECTRIC VIBRATOR AND
FORMATION OF ELECTRODE
THEREOF



ABSTRACT : PROBLEM TO BE SOLVED: To prevent the adhesion of piezoelectric ceramic plates to electrodes from being marred by a method wherein the Ni electrodes formed by performing an Ni electroless plating are formed on both sides of the ceramic plates in a thickness in a specified range and the Sn electrodes formed by performing an Sn electroplating are formed on the outsides of the Ni electrodes.

SOLUTION: A chemical pretreatment is performed on piezoelectric ceramic plates 1 and thereafter, an Ni electroless plating is applied for eight minutes at a bath temperature of 90°C using a phosphorus Ni plating solution and Ni electrodes 2 of a mean thickness of 0.2µm or thicker and 2.0µm or thinner are formed. Moreover, an Sn electroplating is applied using an Sn plating solution on the market and Sn electrodes 3 are formed on the outsides of the electrodes 2. The electrodes 3 of two sheets of the plates 1 are bonded to a phosphor-bronze plate 5 via a bonding agent 4 and are subjected to cutting work into a prescribed width to obtain a bimorph-type piezoelectric vibrator. Thereby, the generation rate of the defective operation of the vibrator can be improved without marring the adhesion of the plates 1 to the electrodes.

COPYRIGHT: (C)1997,JPO